The Workshop.

A Monthly Journal, devoted to Progress of the Useful Arts

EDITED BY

PROF. W. BAUMER, I. SCHNORR AND OTHERS.

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CRYSTAL MANUFACTURE AND JEWELLERY.*

The representation of figure subjects in flat treatment was not attempted, which may be accounted for by the difficulty of their execution; but plastic figures very often contributed to the decoration, thus giving rise to a new style of enamel-work, i. e., that *en ronde bosse*, in which opaque and translucid enamels were both used, the latter being, during the good period, the more prominent part of the composition. To attempt an exact rendering of nature has always proved a dangerous undertaking in the realm of Art; and it is characteristic that in the earlier and purer periods only conventional coloring was used. So also in this branch of art; for with a clear perception of the difficulty of rendering the delicate modelling of the body in enamelwork, the nude parts were chased in gold, and it was only with the advancing mannerism of composition and the decline of art at a later period, that polychromic treatment was introduced. The metal being entirely covered considerably increased in weight, for which reason Francis I prohibited the employment of this enamel by a decree which however was soon revoked at the intercession of Cellini. The most appropriate feature for the use of opaque embossed enamel was the handle of the vase, in the design of which, as in crystals, the artistic genius is allowed free scope, by creating innumerable variations of the same ornamental motive, and combining both beauty and fitness of form. Frequently we see blue enamelled snakes, with extremely fine gold scales, twisted into a handle or at least encircling it. The Florentine Uffizi Gallery shows a tazza, the handles of which are formed by green enamelled fishes, and another vessel which may be considered as the most perfect type of its kind, satyr-figures being wrought into handles. These Satyrs or Syren-figures, often provided with beautifully variegated wings, and in their most minute details modelled with the greatest care and finish, are generally the most characteristic feature of the whole vessel.

The nude parts especially, which are free from enamel, evince a careful study by the goldsmith of the time, further corroborated and illustrated by masks which frequently occur, applied to foot or spout in imitation of the Antique. A rich coiffure, and colored garlands of flowers and fruit often surmount Fauns heads and masks. Complete figures, when represented, are usually affixed to the lid, thus elegantly finishing and crowning the whole vessel. St. George fighting the Dragon was a favourite subject for representation, and one specimen of the Vienna Treasury may serve as the model of a great series of similar works. The knight in blue doublet and armour, rather in the antique style, is thrusting his spear into the jaws of the monster crouching at his feet. The dragon is beautifully conventionalised, and covered with green, black-spotted, opaque enamel. The bare parts are also coated with opaque enamel of a bluish hue, and every feature of the face, and detail of helmet etc., are worked with infinite care and precision, although the modelling is here and there necessarily exaggerated in order to mark the forms through the thick coating of enamel.

A similar treatment of design and coloring is illustrated by like representations of the same time; e. g., St. George encased in a round medallion at Stonyhurst College; and above all the order of St. George, perhaps the costliest relic of this kind, now in possession of a Bohemian nobleman, the specimen exhibited in the *histoire*

* See p. 161 *ante*.

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du travail at Paris, in 1867, being most likely of modern imitation. In a general way opaque enamel is used; in a few instances only translucid enamel being applied. Here we may mention a beautiful figure, crowning a double goblet of agate, and representing an excellently worked flower-girl, whose garments are in green and blue transparent enamel, while the skin is left in gold tint. It is in the possession of the Vienna Treasury already alluded to on account of its richness in similar works of Art.

Such figures were often worn on chains as ornaments for personal use. On festive occasions they were favorite and valuable gifts, called *faveurs*, which were added to the family treasures during many generations. At the time of Cellini it was the fashion to wear enamelled figures in high relief on lapis lazuli, or other mineral or stone, which served especially to decorate belts and bonnets.

In the same category may be ranked the *forgo*, an ornament of the Hungarian *kalpak*, some specimens of which are preserved in the collection of the Teutonic Order at Vienna, and show excellent Italian and German workmanship. Besides the enamel *en basse taille* and *ronde bosse*, above referred to, other kinds were practised although less frequently, in Italy and France. Thus we remark in the casket of Clement V in the Uffizi, the exquisite frieze ornaments, framed by filigree work, and filled in with enamel; and the beautiful crystal cup with the monogram of Diana of Poitiers in the same gallery illustrates the employment of a particular sort of enamel, incrustated in crystal. This art has been recently revived, and its re-introduction by M. Hubert, the excellent Artist of the Parisian firm Froment-Meurice, who exhibited some specimens in the exposition of 1867, may be pronounced an entirely successful attempt.

Together with enamel-work the precious stones, cameos, and pearls, greatly enhance the works of the goldsmith and jeweller; and it cannot be sufficiently pointed out what an excellent style of mounting and setting the artists of the Cinque-cento period employed, in comparison with that of our modern workmen. It is not the manner of foliation which we here allude to, although at Cellini's time the process was one of great refinement, but rather the Artistic combination of stone and ornament which is so effective in the works of the old masters. The truncated pyramidal blocks, arranged in six or eight at the foot of the vessel, and supporting the stone, received generally four black enamelled sides in order not to mar the color of the stone. Many rings of the Renaissance period, a good many specimens of which are dispersed in our museums, are most excellent examples of a judicious employment of precious stones, although it must be admitted that many of these bijoux are of dimensions which might appear too large for our modern taste.

Equal judgment was evinced in the setting and arrangement of pearls, representing, e. g., fruit or flowers, interspersed between enamel leaves; but sometimes they were affixed as mere appendages to vessels of state, and on this account must often be carefully manipulated.

Pearls of different shape, and some rather large, have found a peculiar, but generally not very successful application by forming the ground work of little figures etc., richly mounted in gold. Unfortunately even a master hand is unable to make good use of such shapeless formations unless very much favoured by chance. Thus these works will always remain mere objects of curiosity which scarcely offer sufficient inducement for copying.

Italy, as already stated, was the cradle of modern enamel and jewellery, fostered also almost simultaneously in France, where unfortunately after a most brilliant and flourishing time, many prohibitions and restrictions soon led to their decline. Germany, as well as England, notwithstanding the later period of their development of these arts, produced also most excellent works by men who might vie with the best Italian masters. When enamel-painting became the fashion, translucid enamel had everywhere to give way. Though goldsmith's work and jewellery had still grand productions to show, they were rather coarse and of common workmanship, without the use of enamel; still it must be admitted that even these are well worthy of study for their conception and composition.

If in conclusion we cast a retrospective view on modern manufacture of translucid enamel, we may state that France, which started with a revival of this art, is most advanced in its application, her artists being perfectly aware of many advantages of practical execution, and thoroughly mastering the design. Against two extremes, often so prejudicial to true art, the modern goldsmith may guard by a judicious and assiduous study. Into the one he is enticed by servile copying, in an archæological sense, of the sixteenth and seventeenth century-work, and trying to complete the illusion to the amateur, by coating the object with artificial patina; to the second he is led by non-observance of an artistic, conventional treatment of enamel in design and application, and by being satisfied with the display of brilliant workmanship and execution.

Naturally enough, goldsmiths following the first of these directions aim less at producing objects for practical use, than at filling the shelves of private and public collections with their works. Rudolphi and Duron in Paris vie with the Cinque-cento works by their excellent imitations, and a Vienna firm has likewise attained a certain reputation in this speciality.

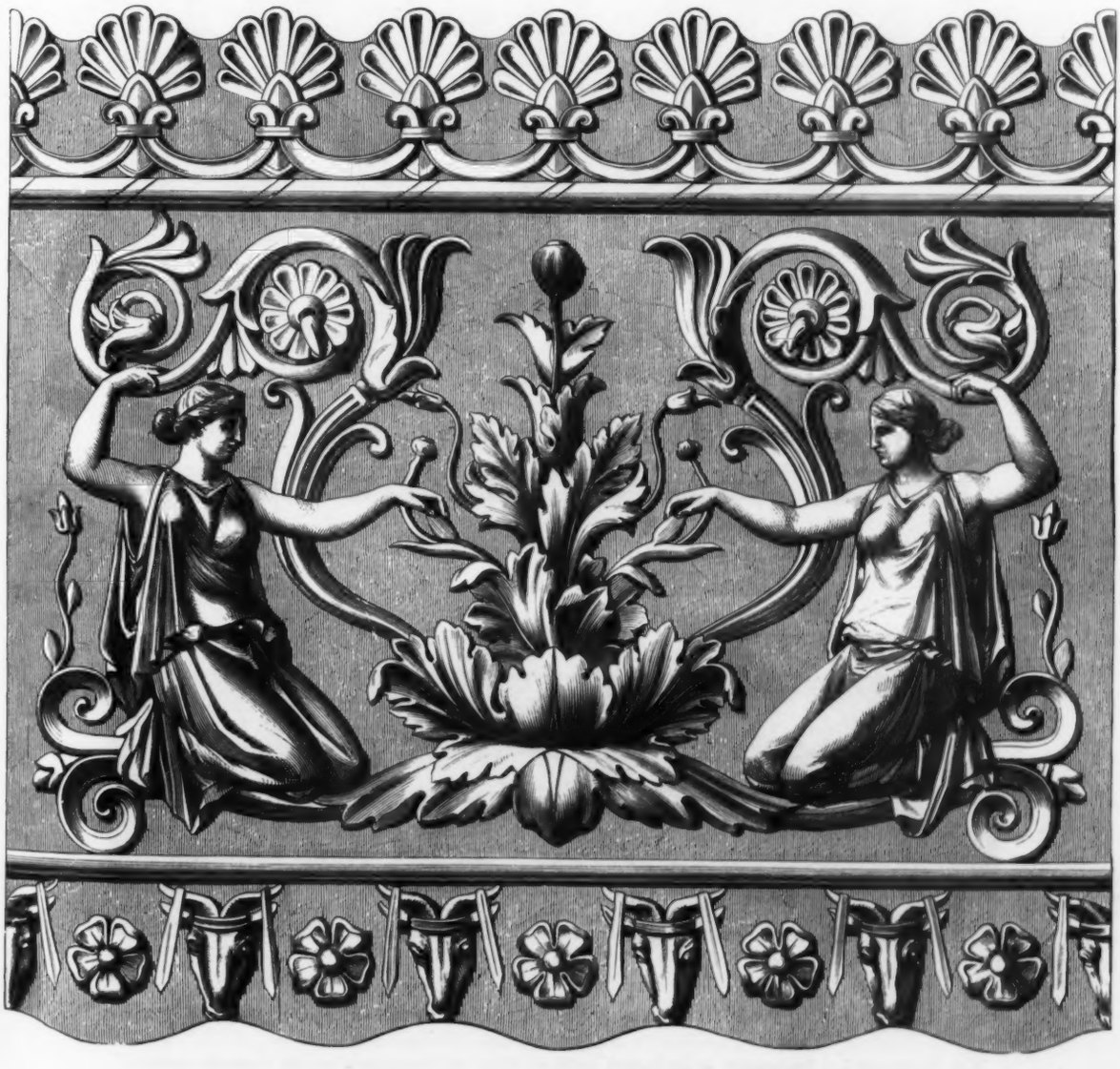
The ranks of the second category are filled by most of our manufacturers to whom fashion is the supreme law, being guided by her instead of being her guide; and it will be long before they decide on emulating the beautiful creations of old masters and profiting by the rich treasures of art which they have accumulated.

Only few pursue the happy medium, and amongst these Lepec in Paris takes a conspicuous place, although a severe critic might perhaps reproach him with a too extensive employment of opaque enamel.

It is certainly of rare occurence that an artist has

occasion in our time to execute great vessels of state in the style of those here mentioned; he is generally compelled to restrict himself to the production of smaller works, i. e., jewellery and personal ornaments, for which the Antique may also furnish excellent decorative motives; and the most successful and beautiful imitations of this kind by Castellani at Rome are worthy of regard. But if the task is to create a work of true Art of high conventional treatment, and to combine organically and harmoniously the gold with precious stones and enamel, then we can only rely on those grand principles of Art, to which the old masters have given form and expression in their magnificent works, the crystals and jewellery of good Italian Renaissance.

Specimens of Ornamentation.



No. 1. Greco-Roman Style. — Terra-cotta Frieze; 1/2 of real size.

No. 2.

No. 3.

No. 2. Early Gothic. — Detail of Lintel from North Porch of Chartres Cathedral. Thirteenth century.

Nos. 3, 5 and 7. Arabesques in Embossed Leather; from old bookcovers of the sixteenth century.
Leaves and flowers fill the four angles of a square, thus producing a regular distribution of the main features.

No. 4.

No. 5.

No. 4. Decoration for Pottery, designed after Etruscan models.
Ground-color black; horizontal shading brown-red, dotted parts yellow, remainder white.

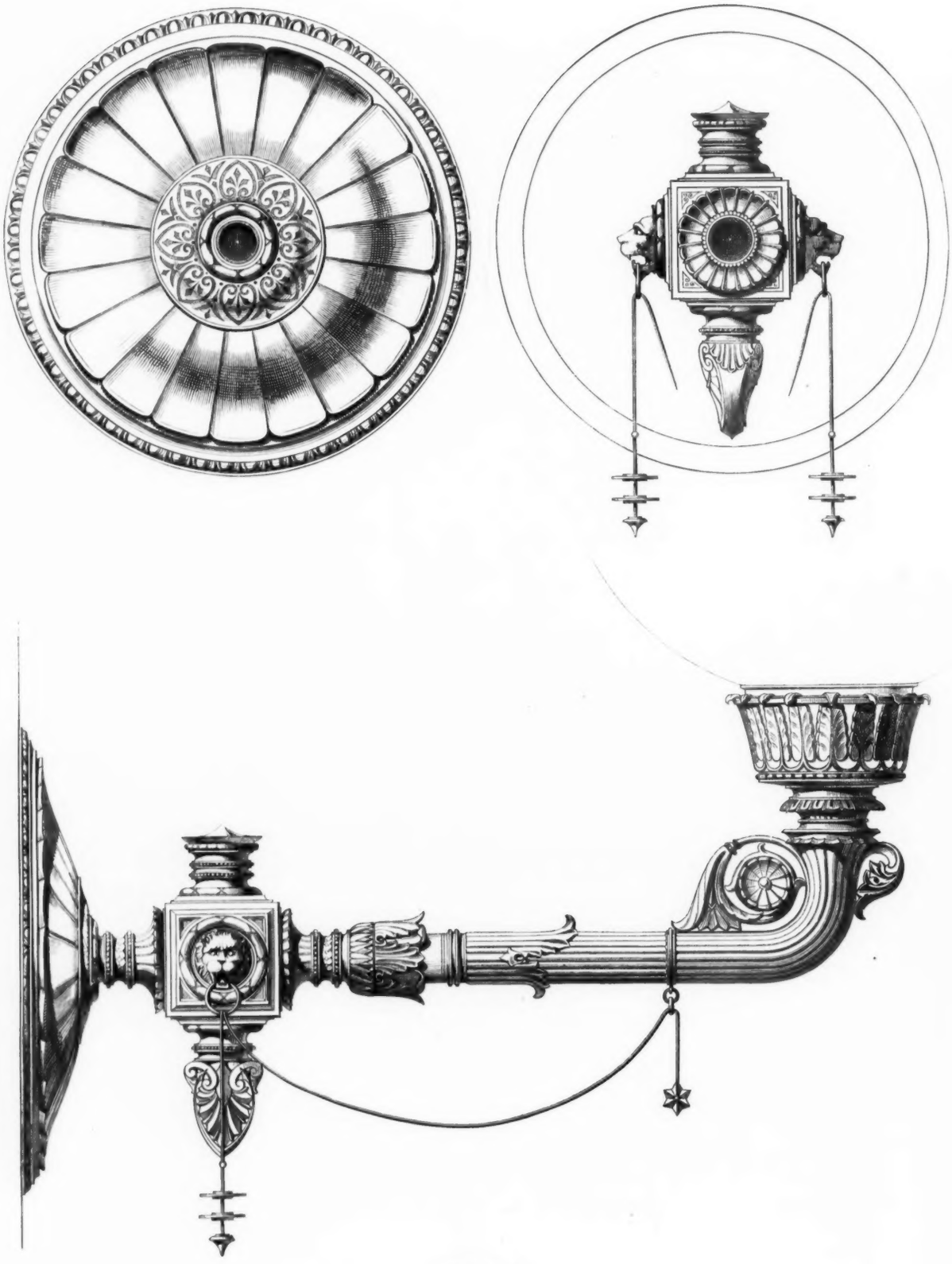
No. 6.

No. 7.

No. 6. Pattern for Hangings; designed after an incised ornament in metal-ground from a clock-case of the seventeenth century.

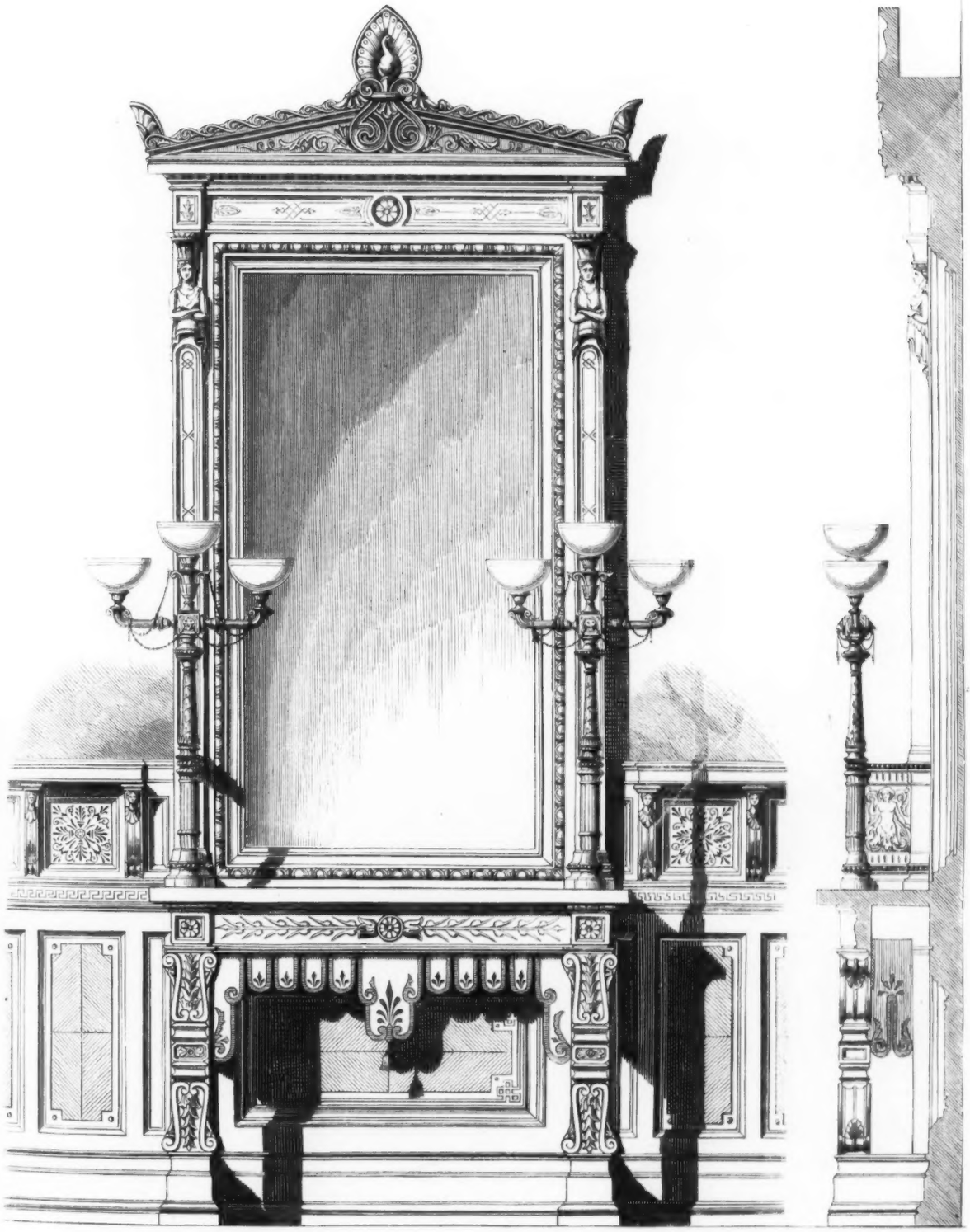
No. 8. Cast-iron Drinking Fountain. — Mr. Dollinger, Archt.

For plan of fountain see Supplement, No. 4.



Nos. 9—11.

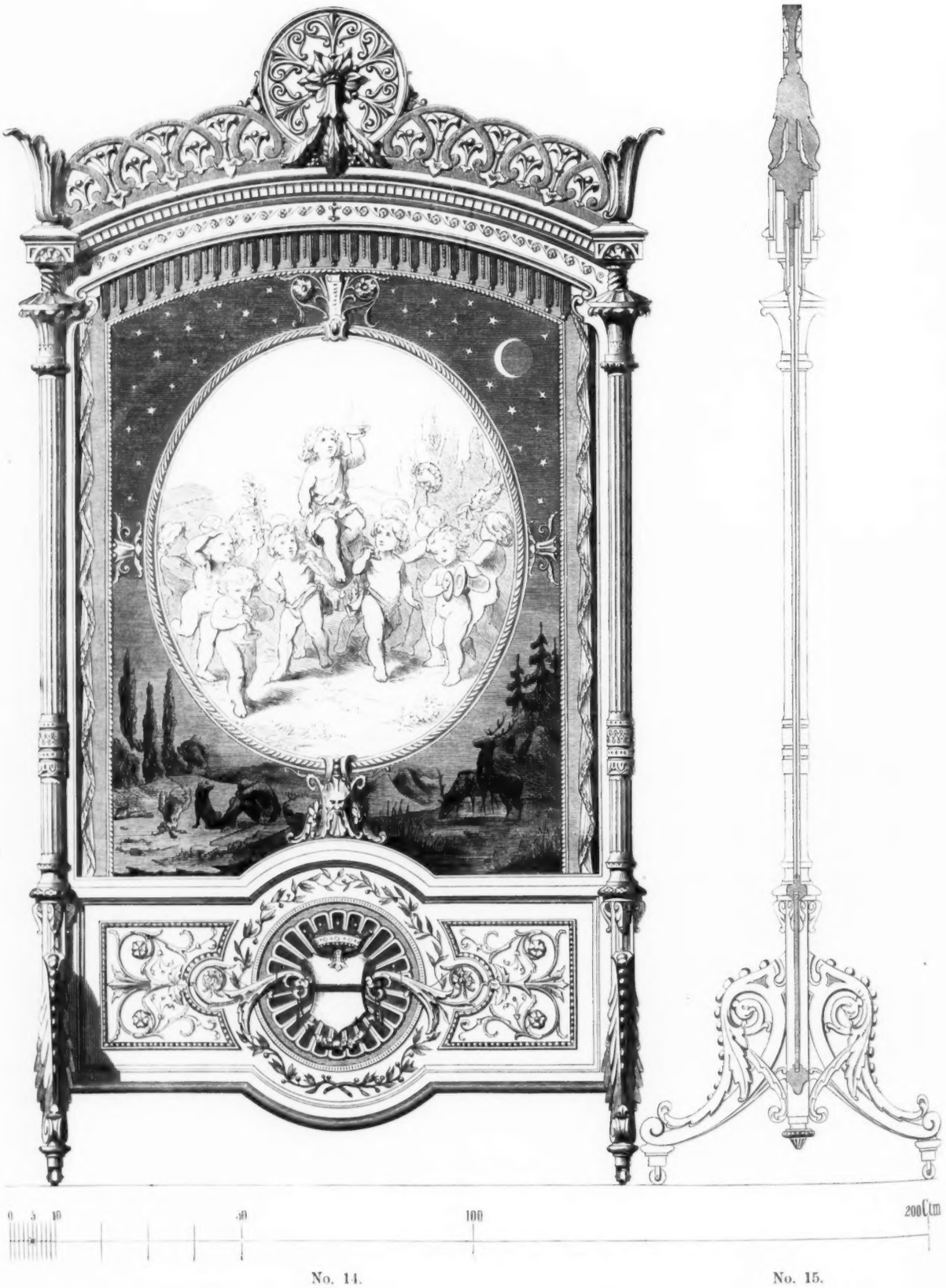
Nos. 9—11. Bronze Gas-bracket; 1/2 of fullsize.



No. 12. No. 13.

Nos. 12 and 13. Pier-glass with Console Table. Front-elevation and section.

The slab in light marble; carvings in oak; ornaments in gold with the exception of the egg- and tongue ornament, the two capitals and consoles; the scallops white, bordered with green; the upper frieze-ornament red; the bronze candelabra in the style of gas-bracket in No. 9. For details see No. 5 of Supplement.



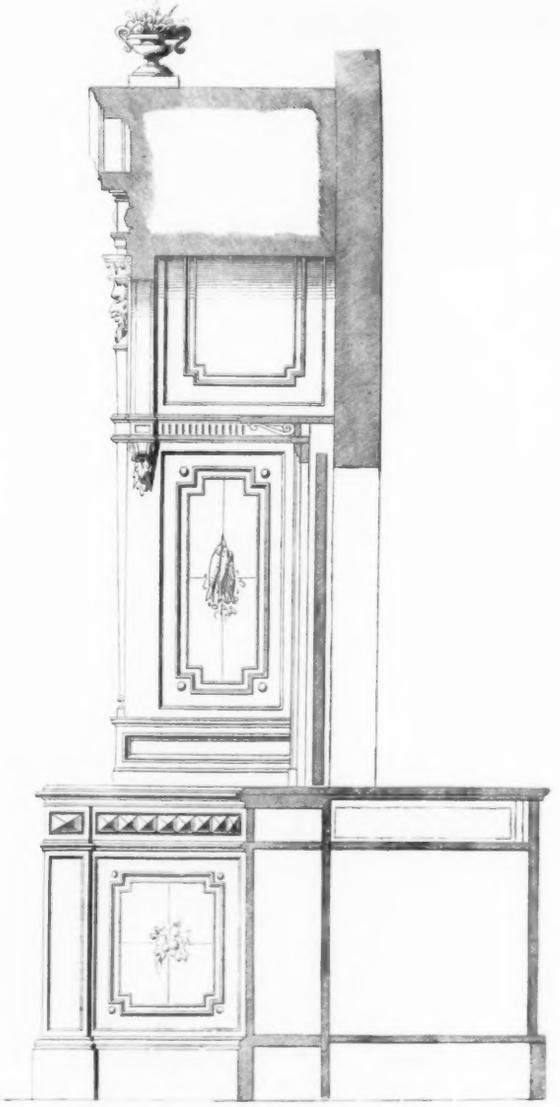
No. 14. No. 15.

Nos. 14 and 15. Fire-screen. Elevation and section.

The frame gilt: the screen either painted in various colors, or embroidered, the under part showing a medallion with armorial bearings on blue ground; the laurels painted, the ornament gilt.

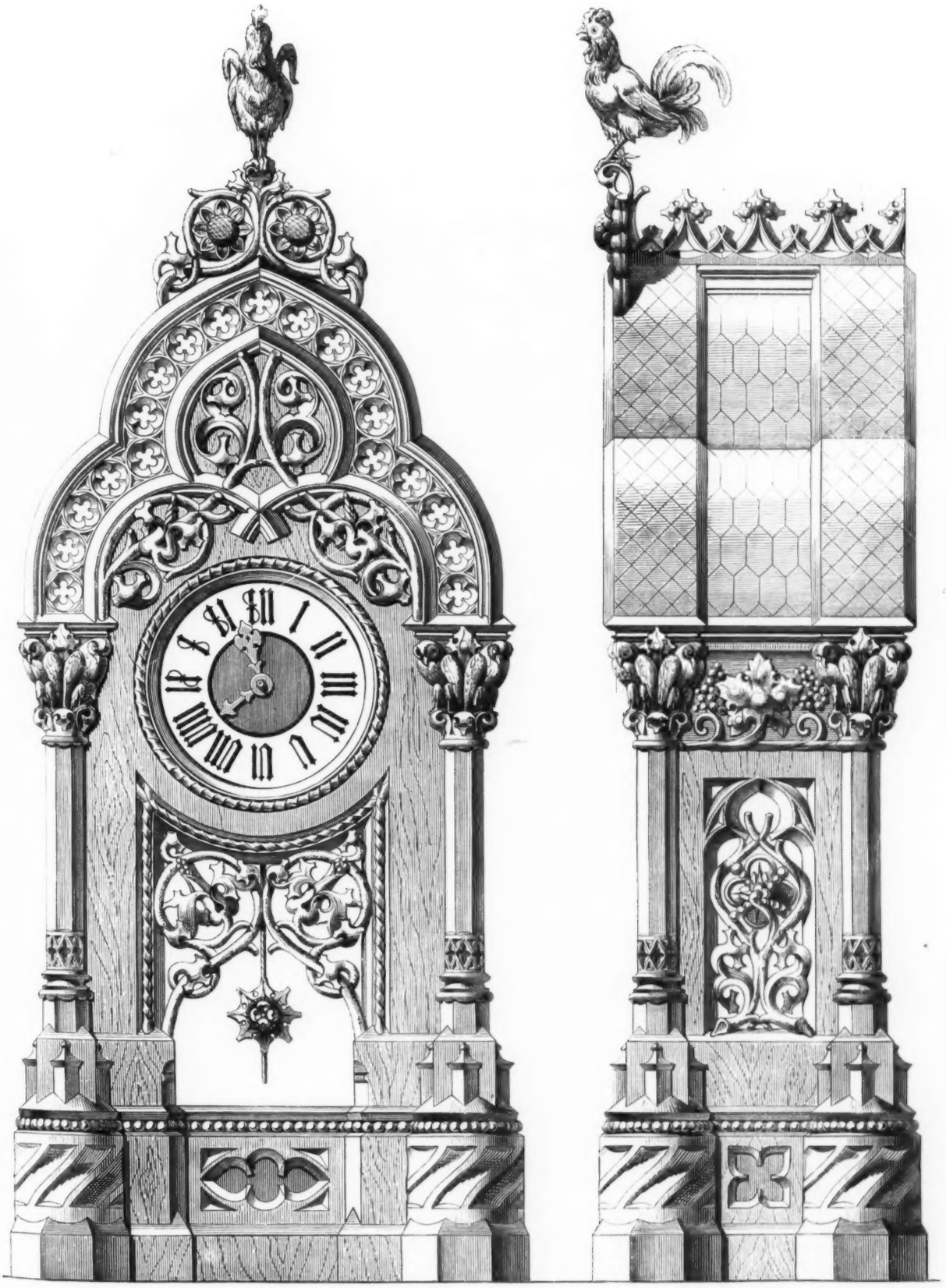
No. 16. Arm-chair. For full-size details see No. 1 of Supplement.

No. 17.



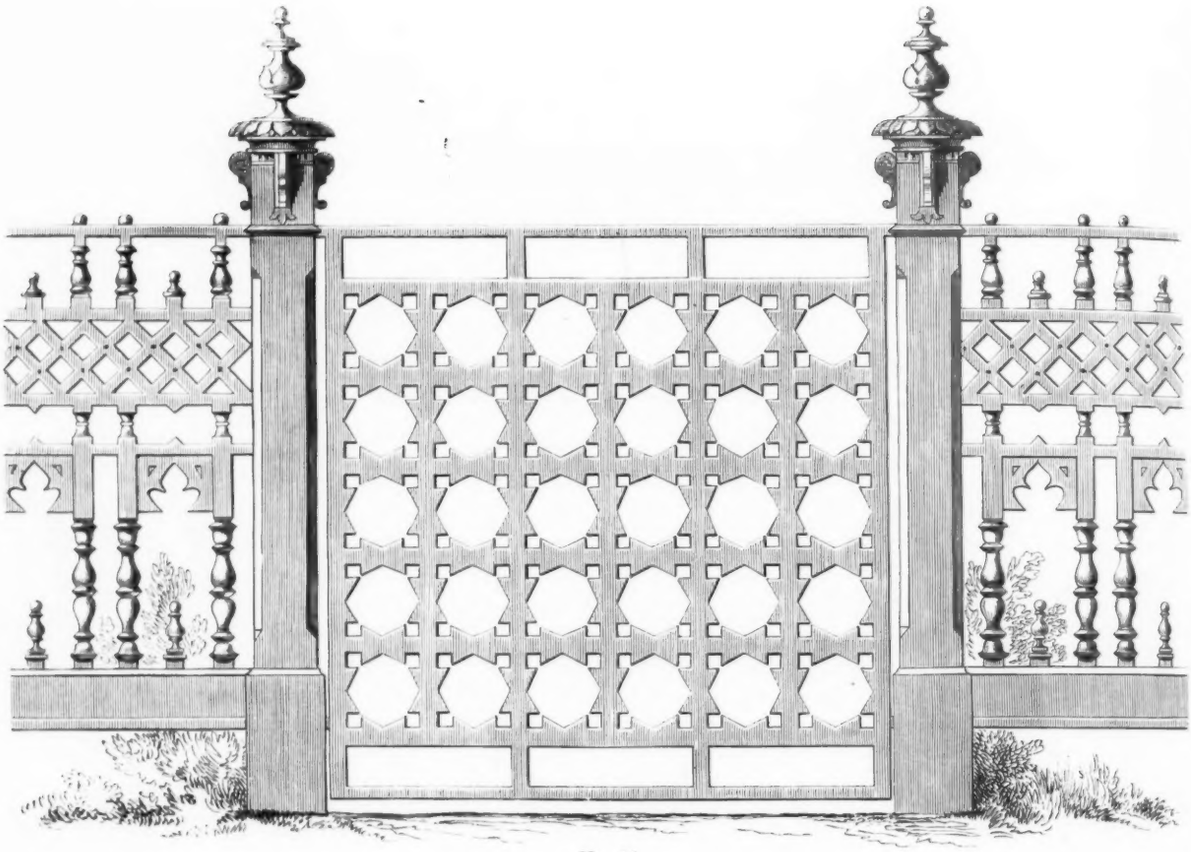
No. 18.

Nos. 17 and 18. Side-board in Carved Oak, polished with wax, for the dining-room in the Villa Leo, at Berlin: Mr. van der Hude, Archt.
The plan, No. 3 of Suppl. shows at the back of side-board a sliding-door, 0m.67 in clear, leading to the pantry.



No. 19. No. 20.

Nos. 19 and 20. Carved Clock-case. For full-size details see No. 2 of Supplement.



No. 21.

No. 24.

No. 22.

No. 26.

No. 27.

No. 28.

No. 23.

No. 25.

No. 21. Mauresque Garden Door in the Villa of Jussuf Bey, Cairo. From the designs of Mr. Stadler, Archt., Zurich. The door is of simple but elegant design and of easy execution, consisting of laths, 3 centm. thick.

Nos. 22—28. Modern Jewellery; brooches, rings and ear-pendants, manufactured by Mr. G. Ehni, Stuttgart.

No. 29.

No. 29. Wrought-iron Grille from the belfry-arch of St. Guy Cathedral, Prague. Seventeenth century. From the design of Mr. Schmoranz, Archt.

VARIOUS.

Alloys.

Most metals are capable of uniting with others, the combination forming what are termed alloys. These are chemical compounds; not, as some persons suppose, simply mixtures. In many cases, when one metal unites with another, the alloy gives scarcely any indications of the characters of the component metals. Thus, copper alloyed with aluminum, in the proportion of 90 of the former to 10 of the latter, gives the alloy called aluminum gold. Again, the alloy called Regulus of Venus, so named from the beautiful violet color, consists of equal weights of copper and antimony, neither of which metals is at all similar to the resulting alloy. Some metals, when alloyed, although they undergo no peculiar modification in color, do so with regard to some other of their natural properties, the difference of melting temperature being perhaps the most remarkable. Of this class, plumbers' solder, which consists of 2 parts of lead, fused with 1 of tin, and the alloys in which these proportions are reversed to 2 parts of tin and 1 of lead, are the best known, and are much more fusible than either of the metals used in making them. A remarkable alloy of this class is that of bismuth, which melts at 500° Fah.; lead, which melts at 600° Fah.; and tin, which melts at 442° Fah.; in the proportion of 8 of bismuth, 5 of lead, and 3 of tin. This alloy melts below the boiling point of water or 212° Fah.; although even the most fusible of its components requires more than double that temperature to melt it. Toy teaspoons are made of this alloy. When used to stir hot tea, the bowls of the spoons all disappear to the bottom of the cup. The alloy of bismuth 8, lead 4, cad-

mium 2, and tin 2, melts at 160° Fah.; that is 52° below the boiling point of water. There is one more alloy which may be mentioned, on account of its peculiarity of being liquid at the ordinary temperature, there being only one other metal liquid under the same conditions; namely, mercury. This alloy consists of equal parts of potassium and sodium. Both of these metals are solid at the ordinary temperature; but when alloyed in equal proportions, they remain liquid. *Piesse.*

Woods used in Cabinet Making.

Mr. Thomas Paterson was one of the working men who visited the Paris Exhibition last year, and ably reported on what he saw there. His report is one of the twelve which compose the little work under the title of «Modern Industries» issued under the auspices of the Paris Excursion Committee. In looking through the magnificent collections of woods from Brazil, Canada, and New South Wales, and the smaller but not less interesting exhibits of Algiers, Natal, Guinea, etc., it is impossible not to be struck, says Mr. Paterson, with the small number of these woods which are in actual use in the manufacture of furniture. Some of the woods are shown to be of large size, and are exceedingly beautiful in color and figure, and many of them would contrast admirably with some of those at present in use.

There was a contribution to the Exposition of specimens of timber, collected by the late Captain Fowke, in which several hundreds of different kinds of wood are arranged in a kind of revolving screen. Each specimen is labeled with its specific gravity, and the amount of weight necessary to break it. Each piece was of the same size — viz., two inches square, and has been actually broken by the weight marked on it, thus giving any one accustomed to work in wood a very good idea of the use it may be put to. Collections of this kind would be of the greatest use. They might be accompanied with a book composed of leaves of the woods, prepared and polished, to show their texture and color, with labels giving the average size of which boards could be cut, the average price, and the market, etc. At present neither artist nor workman is aware of the resources which are at their disposal, and much meretricious ornament would be avoided if this mine of decorative riches were fully explored. In the French colonies department there were some articles of furniture which have been made from the woods of Cayenne, cut by the convicts sent to that settlement.

That a wide and systematic acquaintance with the resources of any country is the first requisite to the development of its trade may be considered an obvious truism; yet in this country, eminently trading and manufacturing, and depending for its greatness upon the growth of its trade and manufactures, no means are taken to make the traders and workers acquainted with the materials which are being wasted in our vast colonies, but which, if known, would be sources of wealth which we can scarcely overestimate. The staghorn sumac may be mentioned as an example of a very finely veined wood, which seems to be plentiful, and which, though it does not grow to any great size, would be useful in manufacture. The butternut, a kind of walnut wood, grows to a large size, and seems to be very cheap. The kauru (or New Scaland pine), also a wood to veneer upon would, I think, be of the greatest value; as well as the heron pine (which is sufficiently handsome to be used without any veneers), the red beech, and many others.

As a new application, or, rather, the extention of an old process in the treatment of wood, the chairs and settees in the Austrian department, made by bending long slips, may be instanced. Some of these chairs were exhibited in 1862. The manufacture has, however, greatly improved since that time. One chair in the exposition (purchased by the Prince of Wales) was all that could be wished, both as regards strength and beauty. Though no one would wish to see this system of bending wood applied to all articles of furniture so exclusively as it is applied in the manufacture of these chairs, yet the capabilities of the process are well shown, and much might be learned from them. I noticed a method of producing a very good kind of decoration on polished wood by stamping with what is called by chasers a mutt tool, which produces a slightly roughened but regular surface, the pattern being left polished. I observed, also, in passing round the Historical Gallery, a mode of decoration which had an extremely good effect. This was an application of tortoiseshell. The under surface or side applied to the piece of furniture had been polished and gilded, the outside surface of the shell being then carefully smoothed, and polished, the gold showing through the semi-transparent shell, and giving all its markings, while the shell protected the gilding, so that, though it had been made for more than twenty years, it was still beautiful and effective. It seems to me much to be regretted that some method cannot be devised which would place all such methods of decoration so completely before all our workmen and designers, that they might have them, so to speak, at their finger-ends. *London Building News.*

Photography.

Producing Colored Pictures. — Various attempts have been made to obtain photographs of objects in their natural colors. These attempts have been so far successful as to produce photographs in which every color of the original was faithfully represented; even the iridescent colors of the peacock's feather have been beautifully photographed. It is, however, not yet quite certain whether any means have been discovered by which the colors can be permanently fixed, as hithertoo they have slowly faded away, and become one uniform reddish tint. It is generally admitted that, up to the present time, the most successful photographer in producing colored pictures is M. Niepce de Saint Victor whose process is this: He takes a daguerreotype, or silver coated plate, and dips it into a weak solution of hypochlorite of sodium, having a specific gravity of 1.35, until it has assumed a bright pinkish hue. The plate is then covered with a solution of dextrine, saturated with chloride of lead; it is then dried, and subsequently submitted to the action of heat for several hours until the temperature of the plate reaches from 95° to 100°, or else expose the plate to the rays of the sun as a substitute for artificial heat, under a sheet of paper which had been steeped in an acid solution of sulphate of quinine. The plate is then ready to be placed in the camera obscura, and to receive the colored picture of the spectrum, or any other object. It is said he has succeeded in increasing the stability of the colors developed on the sensitive surface by covering the plate with an alcoholic solution of gum benzoin. This branch of photography has been called Heliochromie.

Decorations of Porcelain, Glass etc. — A very important economic application of photography to the decoration of porcelain, glass, etc., with gold, silver, and other metals, consists in producing an ordinary silver image on a collodion film, and then, by toning processes, converting this image into any other metal which may be necessary. For a gold design the image is toned with chloride of gold; for a design the color of steel the image is toned with chloride of platinum; for a black metallic design the image is toned with chloride of iridium; for a brown design the image is toned with chloride of palladium. A design in a metal of one color can be obtained by first toning the image by the proper metallic salt, and then saturating the film with a solution of some other salt. The collodion film, treated in the manner indicated, is then transferred to the porcelain, and the salt reduced to the metallic state by heat.

Humphrey's Journal.

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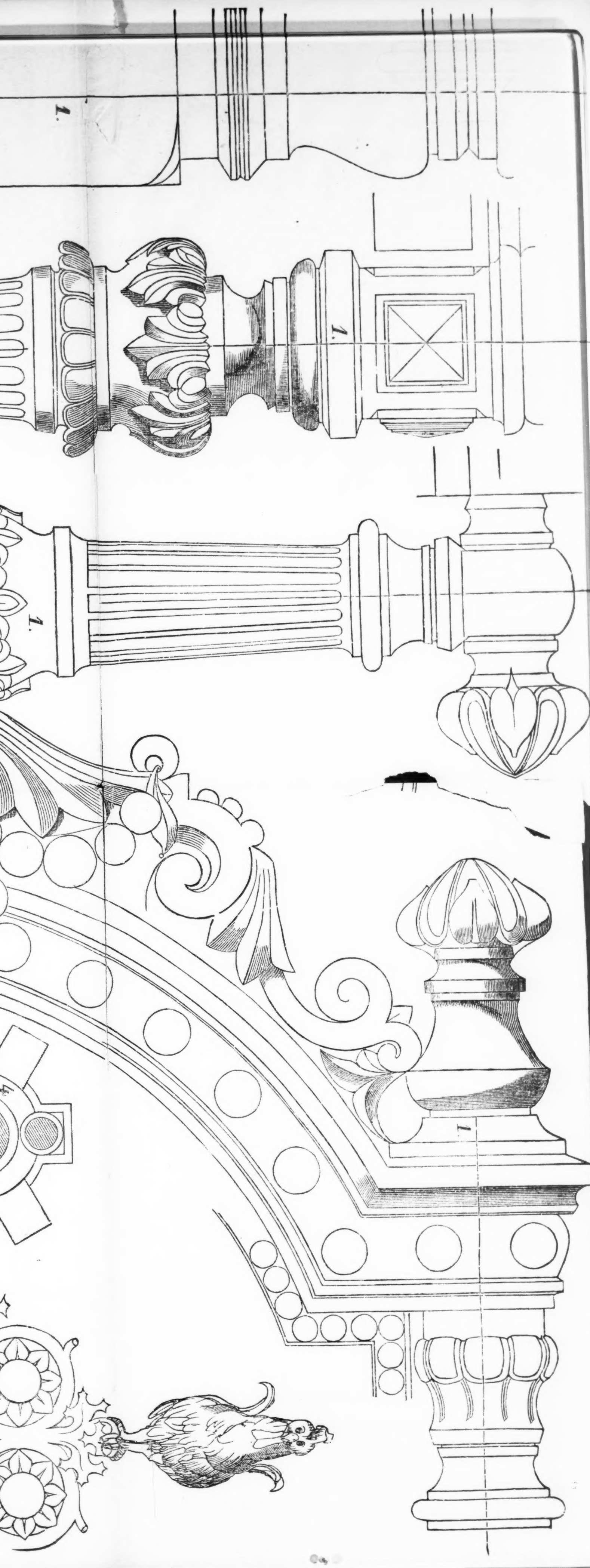

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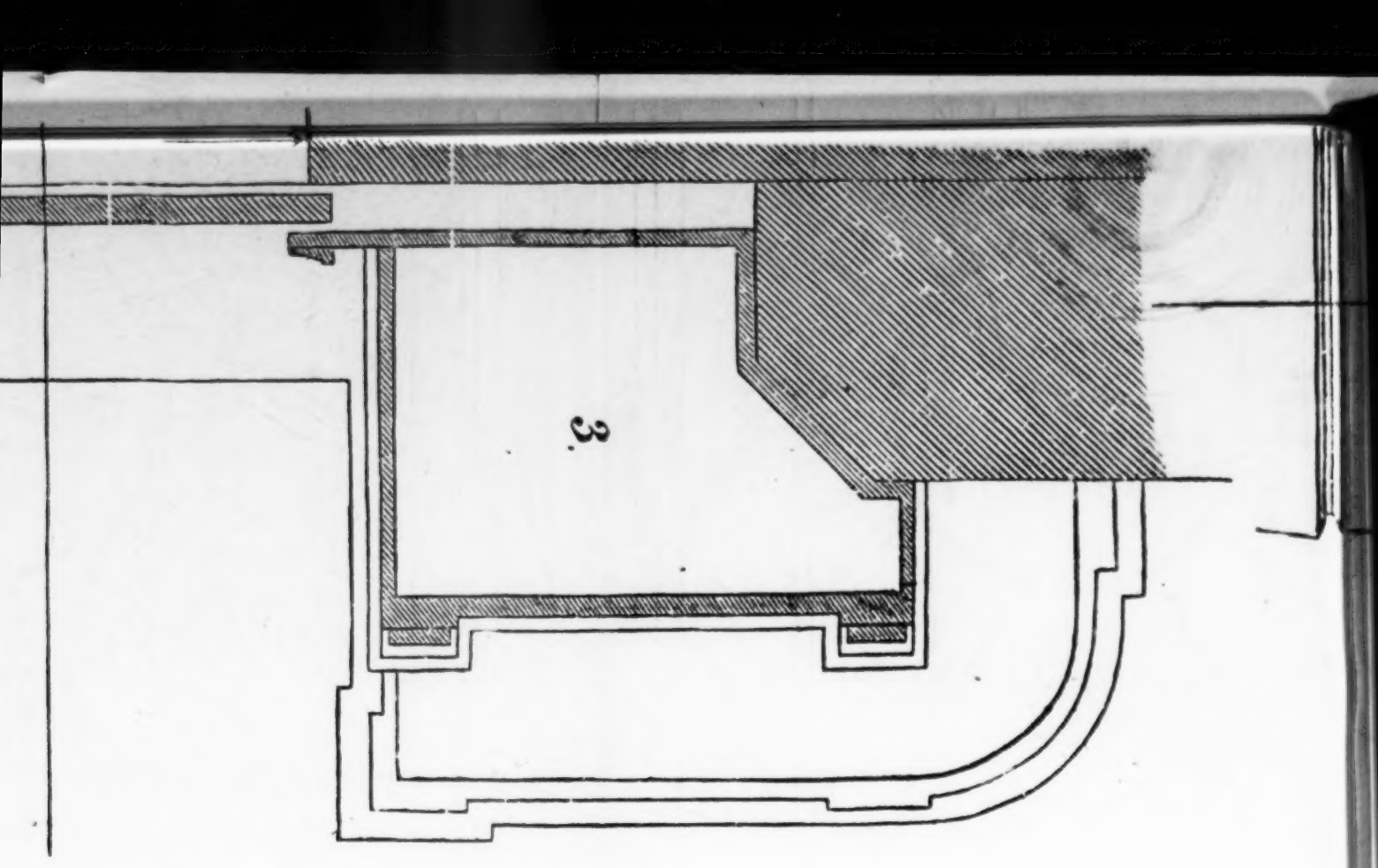

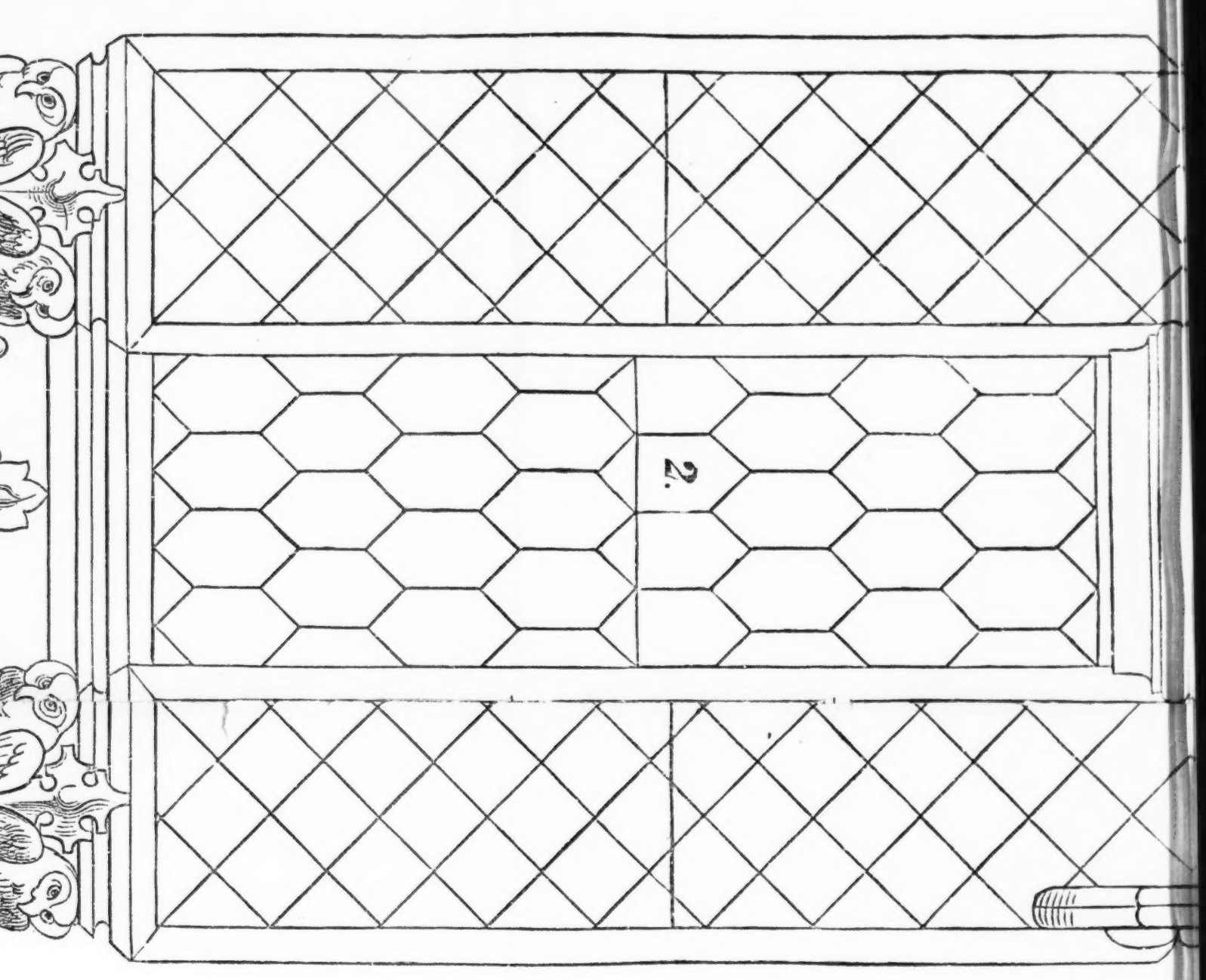

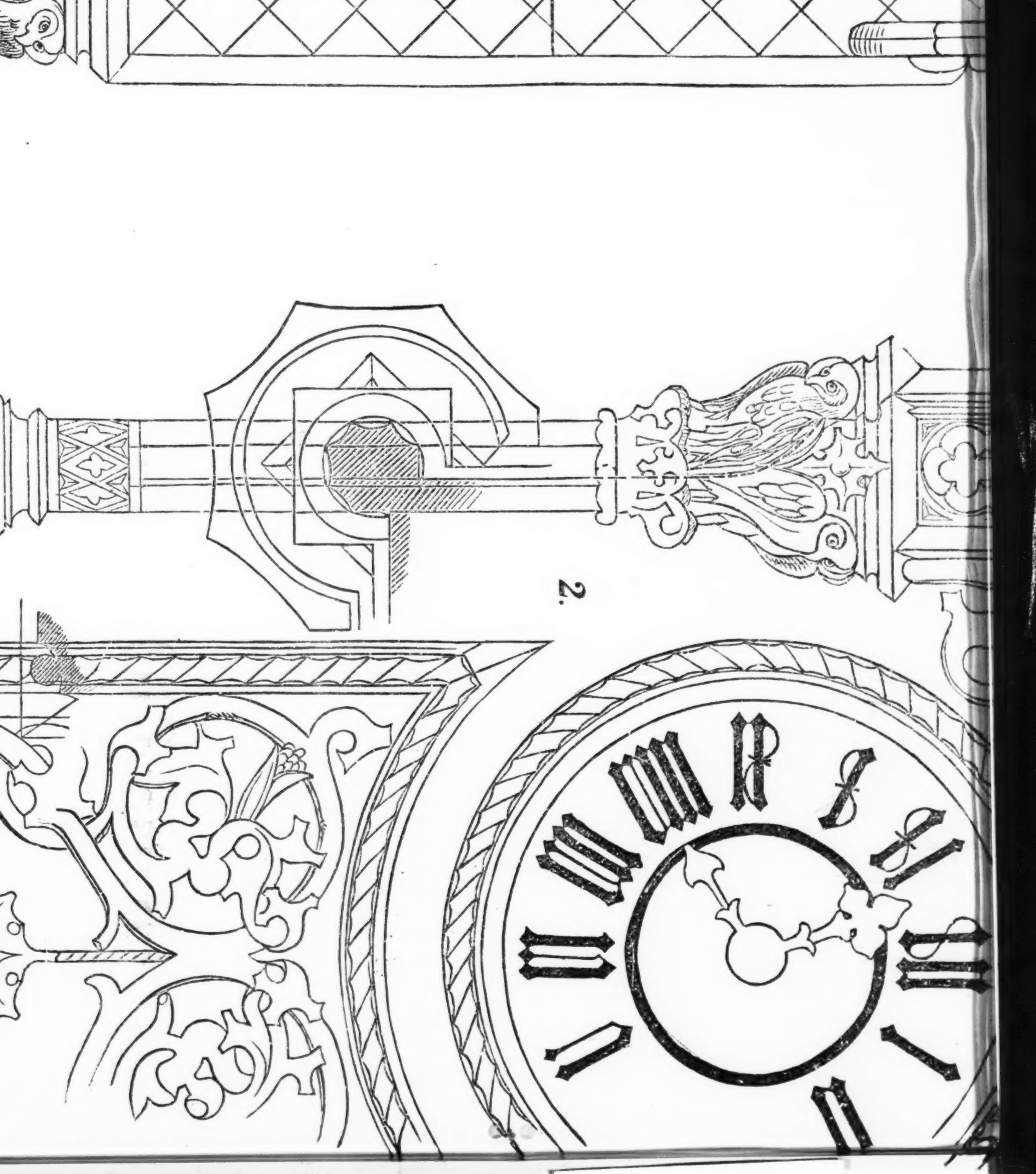

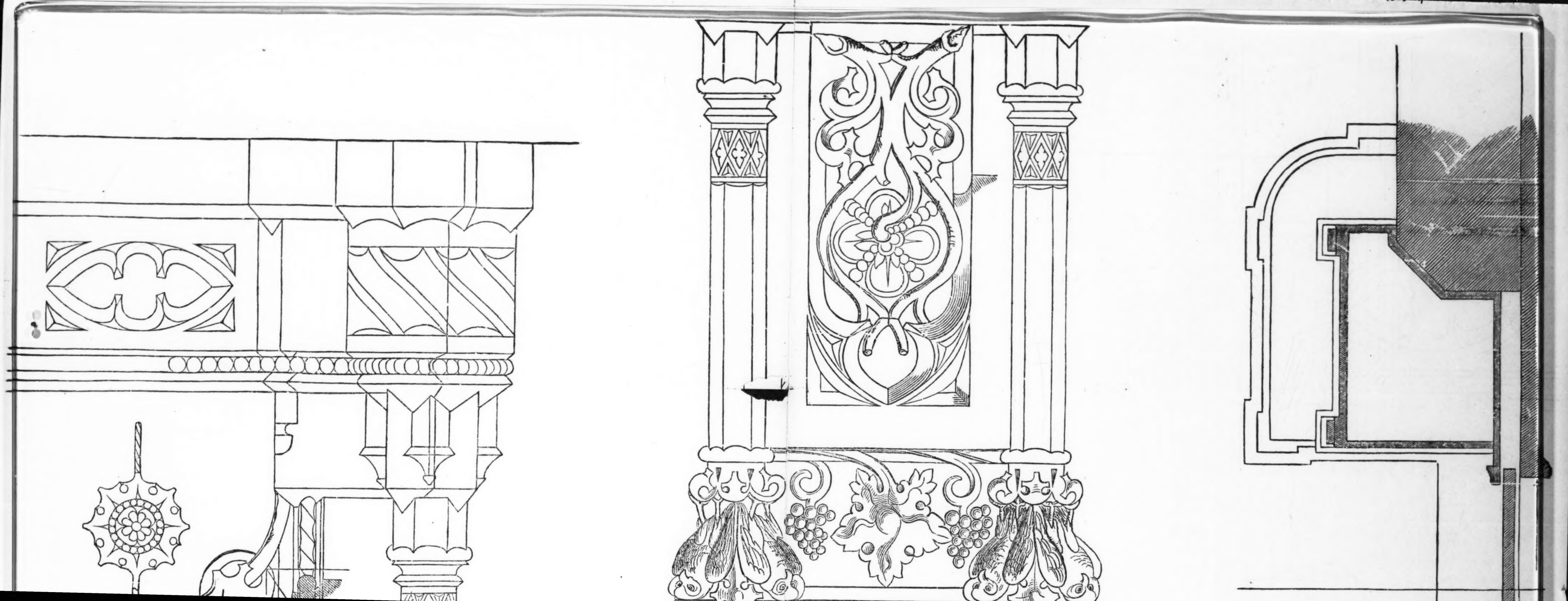

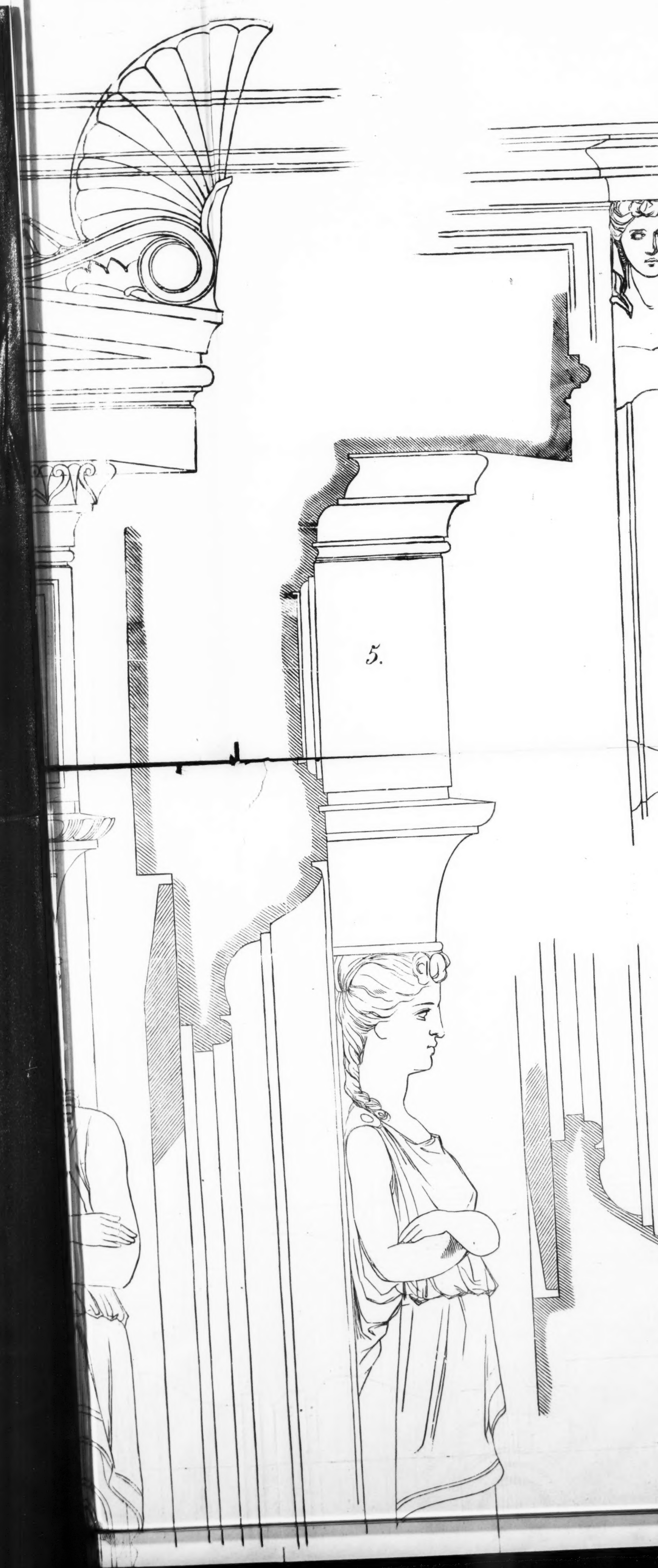

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